SUPPLY CHAIN COUNCIL AWARDS FOR EXCELLENCE IN SUPPLY CHAIN OPERATIONS

United States Marine Corps
Logistics Enterprise Integration

Using a Balanced Scorecard To Facilitate
Logistics Chain Effectiveness

2003 Submission

February 15, 2003

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Foreword

February 15, 2003

This document is the United States Marine Corps' submission for the 2003 *Supply Chain Council Award for Supply Chain Operational Excellence.* It describes ongoing efforts to implement sweeping initiatives to transform the Marine Corps Logistics Chain, how those initiatives are being validated, and how they are linked to overarching enterprise goals through a scorecard developed using the Supply Chain Council's approach and metrics provided in the SCOR model. These initiatives are embodied in the Marine Corps' Logistics Enterprise Integration -- a unique, revolutionary series of initiatives being implemented using best practices, information technology, education, and training.

The goal of the Logistics Enterprise Integration is to improve logistics support to the Marine Air Ground Task Force (MAGTF). In today's environment, this means a leaner, more focused logistics effort -- one that provides a more sustainable and combat effective force with the least footprint ashore possible. We accomplish this by: 1) focusing logistics processes on the MAGTF to create an agile, flexible, and responsive Logistics Chain; 2) creating an integrated set of Logistics Chain processes with a robust order management and distribution capability as the hub; and 3) enabling the Logistics Chain with a portfolio of interoperable systems and technologies as part of the Global Combat Support System (GCSS-MC).

The Logistics Enterprise Integration initiatives are linked directly to the goals and objectives of the Marine Corps using the Marine Corps Logistics Campaign Plan that provides the vision and purpose for the Logistics Chain. It recognizes that our Logistics Chain must be flexible, adaptable, responsive, and above all, focused on the MAGTF (our "customer"). Toward that end, the ILC is implementing specific actions to transform the Logistics Chain using a balanced scorecard to facilitate and guide the transformation.

At the core of the transformation is the Logistics Operational Architecture (OA). The OA is a blueprint for Logistics Chain modernization based on best practices. It is being validated by the Operating Forces using new processes, new organizations, and new information technology. The validation is incremental, taking the form of a spiral development effort, and is providing feedback based on the logistics scorecard. By tracking the results and fine-tuning our processes using the scorecard, we ensure that our logistics transformation stays rooted in the vision and purpose and never loses sight of the MAGTF.

Richard L. Kelly
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Executive Summary

The Marine Corps will continue to be the world's most capable expeditionary fighting force by dramatically enhancing the expeditionary and joint capabilities of the MAGTF through the evolution of logistics from where it has been in the recent past to where it is headed in the near term.

The evolution of the USMC's logistics transformation in a sense is as dramatic as the development and refinement of amphibious warfare in the 1930s and 1940s, and from a logistics support standpoint will have as profound an effect on our expeditionary capabilities.

The logistics transformation started in 1998 with the Integrated Logistics Capability (ILC) program in an attempt to modernize our logistics information systems. It quickly evolved into a significant business process reengineering effort where we looked closely at the logistics mission and how we provide combat service support. The effort led to a set of recommendations that is significantly transforming Marine Corps logistics. The main tenants of that transformation are:

- Redefining the customer by focusing on the MAGTF
- Implementing "Logistics Chain Management" throughout the enterprise
- Focusing on "effectiveness" while taking advantage of "efficiencies"
- Integrating our processes around product and service fulfillment using best practices where they make sense
- Re-engineering the way acquire and manage information technology by adopting a "portfolio management" approach and relying on commercial-off-the-shelf systems and technology where possible
- Organizing in a way that makes sense -- based on the new processes and roles

Toward that end, the Marine Corps Logistics Enterprise Integration has evolved from the original set of ILC recommendations to a proof-of-concept and a validation series. The entire transformation effort has been guided by a set of performance metrics that are linked directly to the goals of the enterprise. These metrics comprise the Marine Corps' balanced scorecard and were developed using the Supply Chain Council's approach and metrics found in the SCOR model. To date, the following results have been achieved:

- Changed policies Marine Corps-wide in accordance with the OA. These changes and the results follow:
    - Realigning and eliminating supply/inventory functions led to a 60 percent reduction in supply response time, and a less variable customer wait time.
    - Collapsing 2nd and 3rd echelons of maintenance and realigning maintenance functions within the MAGTF has led to a 70 percent reduction in median repair cycle time, and a less variable maintenance response time.
    - Improved logistics processes led to a more accurate picture of equipment readiness and increased reliability for motor transport equipment.

- Changed policies Marine Corps-wide in accordance with the OA. These changes and the results follow:
    - Centralized management for secondary reparables at the Materiel Command. Resulted in enterprise-wide visibility of assets and a greater ability to fulfill customer demands. Eliminated $17 million in deficiencies, brought 478 principle end-items off deadline, and reduced inventory by nearly $350 million.
    - Forward stock positioning in Italy, Japan, Germany, and Hawaii (in partnership with DLA) has led to a reduction of 20 days customer wait time.
- Portfolio management for logistics information technology has led to a reduction in legacy applications from approximately 240 to 70, and the procurement of commercial-off-the-shelf solutions to enable the logistics chain.

The Marine Corps Logistics Enterprise Integration effort is leading to significant change and improvements based on the vision of remaining the premier expeditionary force in the world. The ultimate goal for the logistics enterprise is to provide an improved logistics capability while at the same time reducing footprint and cost. This can only be achieved by aligning each initiative with the organization's goals using a scorecard, and constantly evaluating results to ensure that our main priority (combat effectiveness) is not being sub-optimized. More importantly, the scorecard allows us to stay focused on the ultimate customer - the MAGTF.

Section 1
General Information and Project Complexity

(1) SUBMITTING ORGANIZATION

United States Marine Corps, Installations and Logistics Department

(2) ORGANIZATIONAL UNIT

United States Marine Corps, Installations and Logistics Department, Logistics Plans, Policies, and Strategic Mobility Division

(3) MISSION DESCRIPTION

Provide logistic support to Marine Corps Forces to enable them to accomplish assigned missions across the full spectrum of expeditionary operations.

(4) AWARD CATEGORY

Supply Chain Operational Excellence – Department of Defense

(5) DESCRIPTION OF THE LOGISTICS CHAIN AND PROCESSES

The purpose of the ILC Center is to implement a transformation strategy based on best practices that provides the framework for the execution of agile and effective logistics in support of the MAGTF.

This description of the Marine Corps Logistics Chain discusses what we have accomplished in the past 12 months toward transitioning to the new Logistics Chain.

Current Logistics Chain

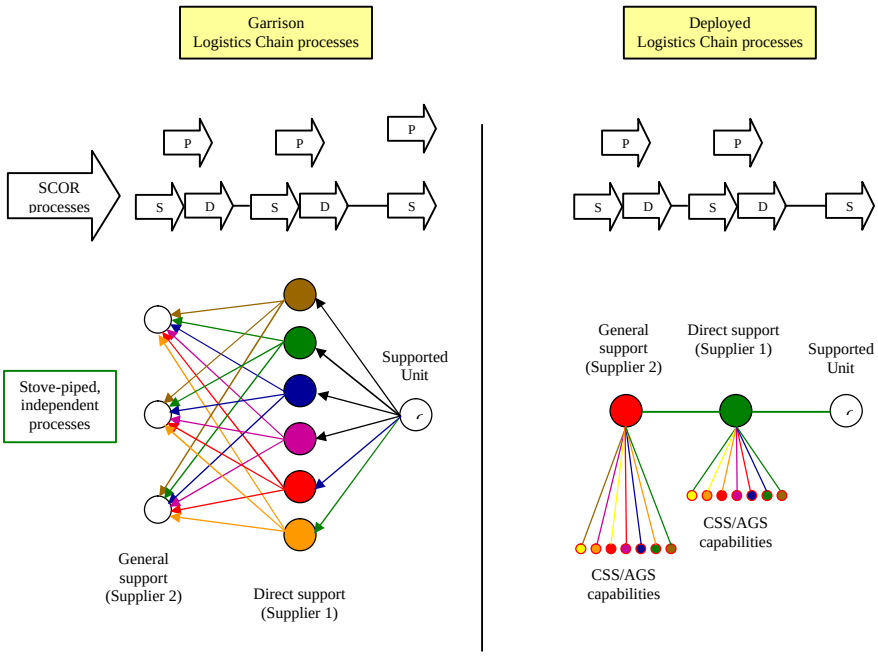
There are currently two distinctly separate Logistics Chains in the Marine Corps – one to support units in garrison and one to support units that are deployed.

Current Marine Corps enterprise-wide logistics operations can be broken down into three functional levels: general support suppliers, supporting units, and supported units. These levels utilize SCOR processes of plan, source, make, deliver, and return to provide and move goods and services through this Logistics Chain.

- *General support suppliers* include commercial and DoD suppliers that support the United States Marine Corps (USMC). These organizations form a complex network providing goods and services to supporting units.

- *Supporting units* include Combat Service Support Elements (CSSEs) that have capabilities such as supply, maintenance, transportation/distribution, engineering, health care, and other capabilities that directly support MAGTFs. Supporting units provide a variety of products and services to the supported units in two different operating environments: in garrison and deployed.
- In the garrison scenario, the *supported unit* must go through a variety of interfaces to receive goods and services from a complex network of direct support suppliers. In the deployed scenario, one supporting unit typically handless the interfaces and processes for a supported unit.

The current model is complex in that the processes change depending on the environment (garrison or deployed), and the underlying systems and business rules differ based on the commodity or type of service and the supporting organization. Figure 1-1 depicts this complex Logistics Chain. It requires the supported unit to learn and follow many different procedures to obtain logistics support. This is both time-consuming and expensive, and distracts the unit from performing its primary mission. For example, a supported unit may use an electronic interface with a supplier to order consumable items and use a paper-based process to obtain maintenance from another service provider. In order for the three Marine Expeditionary Forces (MEFs) to fulfill their inventory management responsibilities, they must handle 1,500 to 2,000 repair parts and personnel support transactions every day.

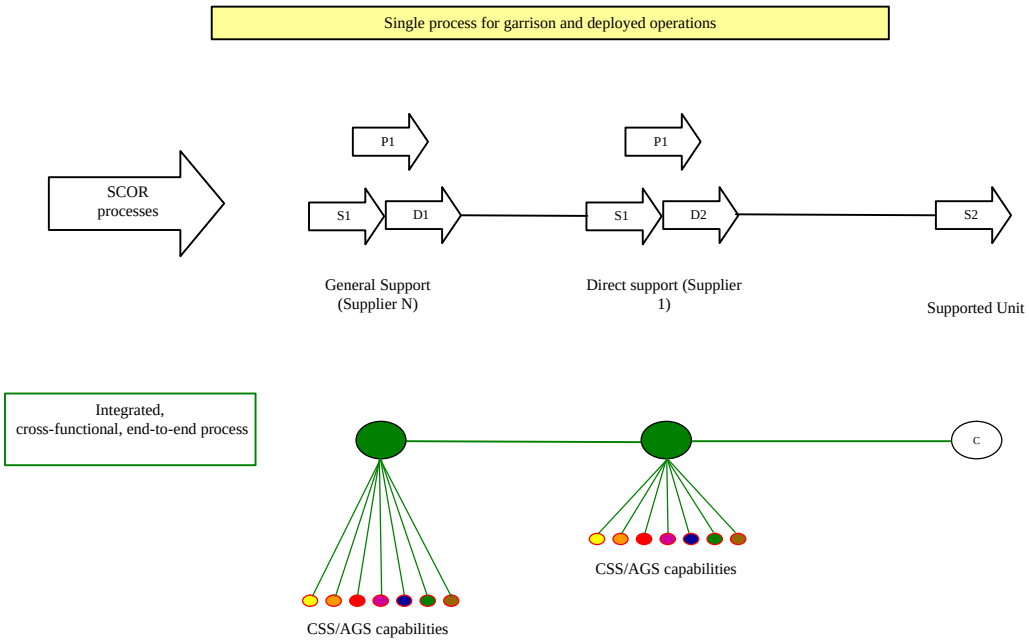


Note: AGS = aviation ground support; CSS = combat service support; P1 = plan Logistics Chain; S1= source a stocked product; S2 = source a make-to-order product; D1 = deliver a stocked product; D2 = deliver a make-to-order product

Figure 1-1. Current Logistics Chain Processes

The New Logistics Chain

Utilizing SCOR model concepts and spiral development, the Marine Corps logistics processes are being reengineered to improve the entire Logistics Chain. The new concept is focused "end-to-end" on fulfilling supported unit demands for products and services with a standard interface, an integrated set of processes, and a single source of supply for supported units – whether deployed or in garrison. This concept is illustrated in Figure 1-2. The objective is to optimize the Logistics Chain for a deployed environment and adopt the same processes for garrison. The focus is to support *all* forces using the best process and apply this concept *throughout* the Marine Corps Logistics Chain – in other words, to train as we fight.



Note: AGS = aviation ground support; CSS = combat service support; P1 = plan Logistics Chain; S1= source a stocked product; S2 = source a make-to-order product; D1 = deliver a stocked product; D2 = deliver a make-to-order product

Figure 1-2. New Logistics Chain Process

Redefining the "Customer." The new process creates a true supported-supporting relationship within the MAGTF. Logistics functions (product and service fulfillment responsibilities) are being realigned to the *supporting unit* level. This allows the supported units to focus on their primary responsibility of training their Marines, and planning and executing their wartime mission. The new processes provide them with a single, standardized process and interface for all logistics products and services. Their logistics focus is now on planning and requesting logistics support.

Aligning the New Processes To Support the Enterprise's Objectives. The new processes were designed to meet the Marine Corps logistics objective of creating a more effective Logistics Chain while simultaneously making it more efficient. The enterprise's objectives

were captured in a balanced scorecard that identified and prioritized desirable Logistics Chain attributes. The Marine Corps logistics scorecard defines effectiveness ultimately as "the availability of weapon systems" (or readiness). This incorporates the attributes of responsiveness, flexibility, and reliability. Efficiency is defined as reducing footprint ashore and lowering costs while providing an acceptable level of customer service. This incorporates the attributes of expenses (or cost) and asset utilization. By balancing these attributes based on the objectives of the Marine Corps leadership, every ILC initiative can be prioritized and assessed based on how well it supports the enterprise's objectives.

Developing the New Logistics Chain

The ILC effort began in 1998 as a unique collection of military, industry, and academic organizations collaborating to develop a future vision of Marine Corps logistics processes. The product of this effort was a set of initiatives that will provide better support to the MAGTF and modernize the Marine Corps Logistics Chain. The Assistant Commandant of the Marine Corps (ACMC) approved the ILC initiatives in 1999, and the ILC Center was established later the same year. The initiatives were revalidated in 2001. Today, the Deputy Commandant for Installations and Logistics (DC I&L) (LPI) serves as the focal point for all ILC-related activities.

The aim of the ILC is to provide exponentially greater combat effectiveness through a more integrated Logistics Chain. ILC initiatives impact multiple organizations and processes associated with the ground combat service support (CSS) of the MAGTF. Implementation of the approved ILC recommendations together with the cutting-edge suite of information technology enablers being provided by GCSS-MC will maximize the combat capabilities of the MAGTF.

(6) LOGISTICS CHAIN PARTNER ORGANIZATIONS – EXTERNAL

As part of the Marine Corps Logistics Chain focus and in accordance with SCOR guidance, collaboration and leveraging of knowledge and practical experience with our partners are key to our success. The Marine Corps uses a disciplined, process-oriented, integrated approach to analyze, design, develop, test, implement, and evaluate the logistics transformation effort. Table 1-1 lists our partners. The number of participants varies directly with the level of involvement of each partner during the implementation of our initiatives. *Evaluation is done by our commanders, and results are proof that the process is working as planned.* The number of participants reported represents the average level of involvement from these partners working on our initiatives over the past year.

Table 1-1. External Partners

Partner	Number of Participants
Defense Logistics Agency, Springfield, VA	10

Partner	Number of Participants
Office of Naval Research, Arlington, VA	2
Pennsylvania State University, Center for Logistics Research, State College, PA	10
Office of the Deputy Under Secretary of Defense for Logistics and Materiel Readiness	10
U.S. Army Tank-Automotive and Armaments Command (TACOM), Warren, MI	5
Center for Naval Analyses (CNA), Alexandria, VA	4
United States Air Force Office of Supply Chain Integration (AF/IL-I), Washington, DC	2

Our partners have been chartered to educate and train our managers, who in turn educate and train the operating forces and supporting establishment as part of the logistics transformation. A total of approximately 200 participants from the following contracting firms have partnered with the Marine Corps to build the ILC process using best business practices and software solutions that result in world-class logistics.

- AT&T, Vienna, VA
- Battelle, Stafford, VA
- Bearing Point, Washington, DC
- IR Technologies, Stafford, VA
- LABLEE Corporation, Cambridge, MA
- MTS Technologies, Stafford, VA
- Northrop Grumman Information Technology, Stafford, VA
- Northrop Grumman Information Technology, Herndon, VA
- Oracle, Reston, VA
- Sapient Corporation, Cambridge, MA
- SRA, Washington, DC
- Stanley Associates, Washington, DC.

(7) FUNCTIONAL ORGANIZATIONS – INTERNAL

More than 175 individuals from the Marine Corps participate in the Marine Corps Logistics Chain initiatives. The majority of these are from the Installations and Logistics Department, Marine Corps Materiel Command, and the operating forces.

Other internal partner organizations that are key to the success of Marine Corps logistics include the following:

- Deputy Commandant, Aviation
- Deputy Commandant, Manpower and Reserve Affairs
- Deputy Commandant, Programs and Resources
- Deputy Commandant, Plans, Policies, and Operations
- Director, Command, Control, Communications, and Computers
- Marine Corps Recruit Depot, Parris Island, SC
- 1st Force Service Support Group
- 1st Marine Division
- 2nd Force Service Support Group
- 2nd Marine Aircraft Wing
- 3rd Force Service Support Group
- Field Supply and Maintenance Analysis Team 1, Camp Lejeune, NC

These organizations represent a broad, cross-functional teaming arrangement that includes internal buyers, suppliers, and policy makers.

(8) PARTNER POINTS OF CONTACT

The Marine Corps' primary points of contact for partner organizations are the following:

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Head, Logistics Distribution Center
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Head, Logistics Capabilities Center
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Head, Logistics Operations and Sustainment Center
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Colonel Richard Mark Nixon
Head, Logistics Vision and Strategy Center
(703) 695-6101

Section 2
Process

(1) REASON LOGISTICS CHAIN INITIATIVE WAS UNDERTAKEN

One fundamental precept of virtually all logistics modernization initiatives within DoD is that, to be successful, any logistics enterprise must manage the Logistics Chain and optimize the activities that occur within it in an integrated fashion in both deployed and garrison environments. This involves the interdependent and integrated performance of the various activities previously viewed as being discrete functions. (See Figure 2-1.)

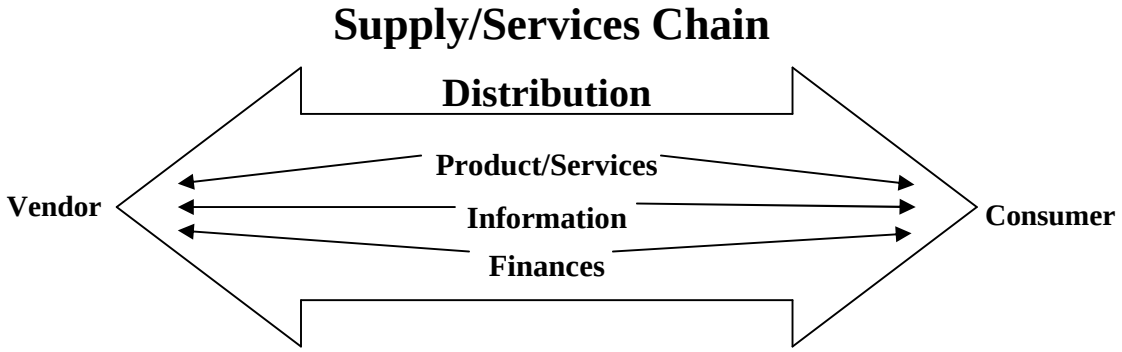


Figure 2-1. The Logistics Chain – Integrated, Interdependent, and Seamless Between the Customer (Supported Unit) and the Service Provider

To meet this challenge, *the Marine Corps recognized initially in 1998 that it must make significant changes in the way logistics is allocated within the Logistics Chain,* especially within the MAGTF, and how logistics capabilities and responsibilities should be realigned. Among the specific recommendations developed by the ILC were:

- Centralizing secondary reparable (SECREP) management: Marine Corps Materiel Command (MATCOM) will have the responsibility for centralized management of all SECREPs across the Marine Corps Logistics Chain.

- Migrating 4th echelon of maintenance (EOM): Selected 4th EOM maintenance functions will be transferred to local MATCOM-managed maintenance centers or outsourced to commercial vendors.
- Moving selected 2nd/3rd EOM to the intermediate level and realigning the supply function: Selected activities will be automated, eliminated, or migrated within the operating forces and supporting establishment.

- Instituting use of the Quadrant model: The Quad model is designed to assist Logistics Chain managers in categorizing inventory by its uniqueness and its mission value, this tool will be used to enhance acquisition, contracting, inventory posturing.
- Modernizing information technology (IT) architecture: This includes re-engineering the operational, systems, and technical architectures as well as streamlining the acquisition process for IT.

Along with new technologies, new and better logistics practices and procedures are being developed at an astounding pace in the highly competitive commercial sector. They have proven themselves by the ascent and dominance of global industry leaders who employ them. The Marine Corps leadership realized in 1998 that it must examine and adopt/adapt state-of-the-art practices and processes, leverage technological advances, and empower Marine logisticians to raise the effectiveness of logistics support to the Corps' combat forces. In essence, we are creating a "new order" for our logistics enterprise, and undertaking the revolutionary changes necessary to ensure that the Marine Corps continues to be the premier fighting force in the world. This is best accomplished by using commercial off-the-shelf (COTS) technology, best commercial practices, and by partnering with industry and within the Department of Defense (DoD).

The mandate for change in the DoD, coupled with the imperative to provide improved operational support to our emerging expeditionary warfare concepts, requires the modernization of Marine Corps logistics practices, processes, and systems. Under the aegis of DoD initiatives and driven by our own internal forces for change, Marine logisticians are undergoing a rapid, significant transformation that is challenging existing doctrine, concepts, and practices, not to mention breaking down "Old Corps" cultural barriers.

Precision is at the heart of the Logistics Chain. Simply stated it is getting the right volume of supplies and equipment to the operating forces at the right time and in the right place.

Speed is rapidity of action. Speed over distance, or space, is the ability to move rapidly. Information tells us who the enemy is, what he has in his arsenal, where he is on the battlefield, when he is likely to maneuver or defend, how he is going to fight, and why he chooses to fight at that particular time. An integrated, interoperable information system enables the combat commander to position his combat power to maximum effect at the crucial time when the enemy is most vulnerable. Timely, accurate logistics information provides the commander with how best to support his force over the whole battlefield, sustain the attack, and continue the attack until the objective is secured. It includes the capability to accurately forecast when he is going to have to be replenished or will require parts replacement. In other words, *information and speed are weapons*.

The following guiding principles provide the context for the Marine Corps Logistics Chain modernization effort:

- Documenting, analyzing, and validating Marine Corps Logistics Chain processes, data flows, and sustaining infrastructure.

- Reviewing and understanding DoD and commercial industry best practices and assessing how they can be applied to the Marine Corps Logistics Chain.
- Developing an improved integrated Logistics Chain focused on a lean and lethal operating forces.
- Designing, validating, and standardizing revised policies and procedures necessary to improve material readiness through streamlined and simplified life-cycle management (LCM) processes.
- In concert with the Marine Corps Systems Command (MCSC), streamlining acquisition of logistics IT enablers within the GCSS-MC portfolio.
- Using IT as an enabler for supporting re-engineered product, information, and financial flows using standard data in a shared environment to meet user needs for valid, timely, and accurate information at all echelons of Logistics Chain support.
- Forming a strategic alliance with academia and industry for logistics research and services, as well as among Marine Corps commands, and all other process owners within the Marine Corps enterprise.
- Serving as the catalyst for the transformation of the Marine Corps CSS functional stovepipes into a synthesized integrated Logistics Chain.
- Ensuring that Logistics Chain reengineering is institutionalized in the Marine Corps Expeditionary Force Development Process.

The Marine Corps Logistics Campaign Plan (MCLCP) 2002 provides a comprehensive reference point for our Marine Corps logistics community, and a compass to guide us. It provides the necessary overarching framework, guidance, strategic and specific goals, objectives, and tasks to successfully evolve Marine Corps logistics.

The vision of the MCLCP is to ensure that the Marine Corps continues to be the world's most capable expeditionary fighting force by dramatically enhancing the expeditionary and joint capabilities of the MAGTF through the evolution of logistics.

Guiding principles outlined in the plan are that the Marine Corps will:

- Organize logistics capabilities to ensure the commander in the field can be absolutely confident that required support will be provided when and where it is needed.
- Maintain a warfighting ethos consistent with Expeditionary Maneuver Warfare and joint concepts as we develop, modernize, and refine our logistics systems and practices.
- Emphasize speed and information as principal contributors to reducing mass, footprint, and inventory.
- Operate in peacetime as we will in wartime.
- Work closely with the Navy to develop a logistics capability that is naval in character.

- Cultivate a closer bond between aviation logistics and ground logistics.

Finally, the Marine Corps has a fundamental understanding and appreciation of the fact that logisticians always determine the pace or tempo of the campaign.

(2) DURATION OF THE PROJECT

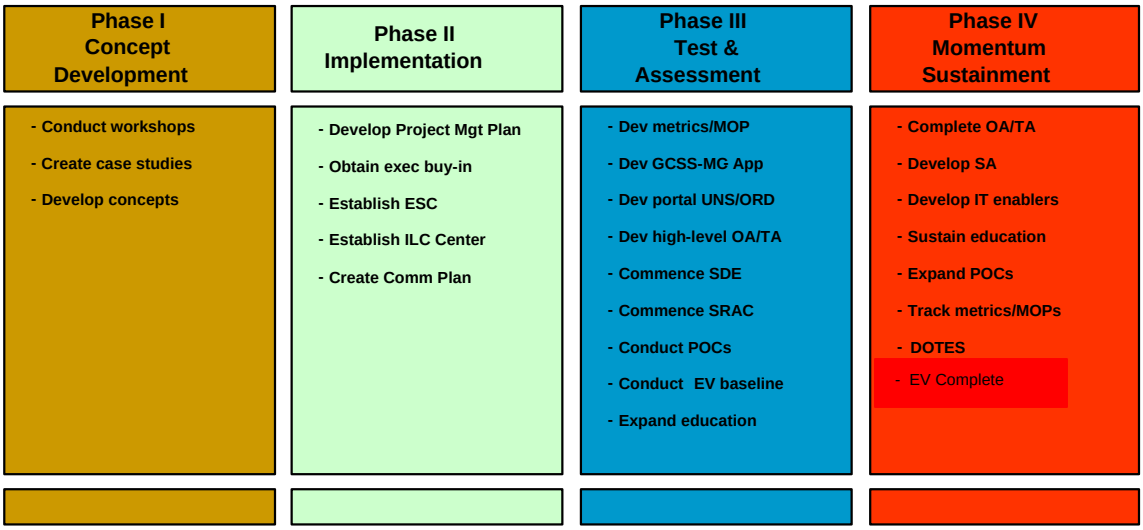
Integrated Logistics Capability initiatives are being implemented using a three-tiered concept:

- Spiral development. Capabilities will be conceptually refined and incrementally validated throughout the operating forces. Initial focus has been and will continue to be on implementing best practices within the CSSE, to enhance support to the MAGTF. We will seek out opportunities to demonstrate increased Logistics Chain responsiveness and operational readiness within the Marine expeditionary unit (MEU) and Marine expeditionary brigade (MEB)-sized MAGTFs. Information Technology will be inserted incrementally, in conjunction with process reengineering efforts (adding functionality and data to the portfolio, and deploying the portfolio within selected organizations).

- Discrete initiatives. Implementation of specific elements of the Logistics Chain will be vetted through the traditional policy review process (i.e., distribution management, property control procedures, personal effects handling, fiscal management migration, automated receipt processing, maintenance task assignment and scheduling, etc.)

- Education. Our Marines must be educated on best practices that are most appropriate to the expeditionary nature of our environment. In addition to institutionalizing far-sighted methodologies, we will continue to utilize academia, for example, the Marine Corps Logistics Education Program at Pennsylvania State University and LOGTECH program at the University of North Carolina, Chapel Hill, to insert fresh and novel ideas into the mainstream. We will continue to work with the Commanding General, Training and Education Command, Marine Corps Combat Development Command (MCCDC) in order to infuse best practice training into a Logistics Chain-oriented curriculum.

The end state for the ILC is a more agile, responsive, and capable Logistics Chain that improves MAGTF combat effectiveness. The ILC will use a phased implementation approach as illustrated in Figure 2-3. The phases include Concept Development (Phase I), Implementation (Phase II), Test and Assessment (Phase III), and Momentum Sustainment (Phase IV). The Concept Development phase entailed a series of workshops and business case studies that developed the ILC program's concepts, objectives, and recommended IT enablers.



Legend:

MOP- Measure of Performance
UNS/ORD – Universal Needs Statement/Operational Requirements Document
OA/TA – Operational Architecture/Technological Architecture
SDE - Shared Data Environment
POC/EV – Proof Of Concept/ Expanded Validation
SA – System Architecture

Figure 2-2. ILC Phased Approach

The Implementation phase focused on establishing the necessary organizations, alliances, processes, and plans required to implement the ILC initiatives.

The Test and Assessment phase is ongoing (during Fiscal Year (FY) 01-03) and includes baselining, process mapping, performance metrics development, proof of concept (POC) assessments, expanded validation (EV) assessments, and the development and testing of the ILC initiatives and their associated IT enablers.

The Momentum Sustainment phase is also ongoing and runs from FY03-06 and is focused on sustaining the momentum achieved in the previous three phases by expanding the POC and EV assessments, tracking key metrics to measure progress, and beginning the implementation of the ILC via the Marine Corps' Expeditionary Force Development System (EFDS).

(3) DETAILED DESCRIPTION OF THE PROCESS

Expeditionary maneuver warfare serves as a backdrop for logistics transformation. The logistics enterprise must be capable of supporting the accomplishment of missions across the entire spectrum of operations.

The Marine Corps is well into the process of gaining the capability to rapidly establish and conduct sustained expeditionary operations from seabases or existing infrastructures ashore, or any combination thereof, at all levels/intensities of operations. The operational architecture once tested and validated by the supported unit, and verified and approved by our senior leadership, will comprehensively address the challenges laid down in the ILC initiative in 1998.

As ILC initiatives have matured, it has become increasingly important to standardize our approach and methodology. A deliberate effort has been made to ensure that all participants in its development used a common terminology. We discovered that the term "Supply Chain" occasionally carried negative or misleading connotations in the functionally stove-piped world of the Marine Corps. The term "Logistics Chain" was coined as a better reflection of the new end-to-end process flows across all of the Marine Corps' CSS functional areas. Also, a great deal of emphasis was placed on defining who the customer is (supported units) and the role of the supporting units.

Clear objectives have been established and are being monitored. They are to:

- Modernize logistics to provide exponentially superior support to the MAGTF. To accomplish this we will:
    - Increase combat power by streamlining the Logistics Chain.
    - Exploit state-of-the-art logistics information systems to provide responsive support and strategic management.
    - Set high standards of performance and strive to exceed them.
    - Train and educate logisticians in best practices to provide world-class combat service support.
- Develop a single process for garrison and deployed operations. This is a *significant* change in the way we do business.
    - Our focus is on the deployed MAGTF…all the time!
    - The supported unit will request support in the form of products or services vice replenish themselves – much like a consumer calls a business or shops on-line for support. The current need for the supported unit to possess a full supply platoon will disappear. Maintenance will rarely go beyond preventive maintenance checks and services and will avoid the redundancies currently existing (weekly checks, semi-annuals, annuals, etc.).
    - There is now a service orientation focused on the supported unit.
    - The process will be end-to-end with benefits accrued to the supported unit, the customer.

USMC Logistics Enterprise Architecture

In order to achieve our logistics transformation objectives, we needed to understand what the new logistics processes would look like after the ILC, Logistics Campaign Plan, and other re-engineering initiatives are implemented. To gain this understanding, we developed a "to-be"

logistics operational architecture (OA) that applies ILC concepts to the Marine Corps logistics enterprise. The output is a detailed model of our logistics processes in 2005 timeframe, and a set of functional requirements, capabilities, and information requirements that we will use as a basis for developing new doctrine, policy, organizational structure, and for procuring new information technology enablers.

- The High-Level operational architecture (OA) was completed in May 2001. The architecture defines Marine Corps logistics business processes at SCOR level three, identifies key nodes, and defines information exchange requirements throughout the logistics enterprise. The model aligns our processes to the supported unit, provides an understanding of what "end-to-end" means, and defines how Logistics Chain management fundamentals enable our ability to fulfill supported unit demands for products and services.

- The Detailed OA was completed in May 2002. It further decomposed the high-level OA process elements to SCOR level 4 (implementation level). For this model, we specifically looked at the major Logistics Chain functions of distribution management, inventory management, maintenance management, order management, procurement, Logistics Chain planning, and performance metrics. When this model was completed, we were able to identify key roles, align those roles to the high-level nodes and translate those to organizations. Additionally, we were able to derive business rules and further define the nature and type of information exchange requirements throughout the logistics enterprise.

USMC LOGISTICS SCORECARD

Prior to developing the detailed OA, we developed a logistics scorecard in 2002 that is comprised of a set of hierarchical metrics based on the SCOR performance attributes. This was a critical step because it allowed us to align our business processes reengineering efforts to the mission and priorities of the organization.

Methodology: The first step in developing the logistics scorecard was to understand the Marine Corps' mission, the priorities of the logistics enterprise, and key objectives of the leadership. The second step was to define key characteristics of the Logistics Chain that were aligned with the enterprise mission and objectives, and identify level one metrics that would indicate performance in those areas. The third step was to prioritize the level one metrics and decompose them into a set of hierarchical diagnostic metrics. The fourth step was to use those metrics to develop and fine tune our business processes to support the overarching enterprise's goals and objectives.

The following is a description of the Marine Corps mission, enterprise goals/objectives, and how the scorecard was aligned to support them:

USMC Enterprise Mission

The Marine Corps' Enterprise Mission is to organize, train, and equip Marine Expeditionary Forces with the military capability to execute missions in support of the National Military Strategy as directed by the National Command Authority. Military capability includes four major components: force structure, modernization, readiness, and sustainability.

USMC Logistics Mission

According to the MCLCP 2002, the mission of Marine Corps logistics is "To provide support to Marine Corps forces to enable them to accomplish assigned missions across the full spectrum of expeditionary operations and warfare."

Based on imperatives established by the MCLCP and DoD logistics transformation goals, senior USMC logisticians provided guidance that the priority of the USMC Logistics Chain is to provide the combatant commanders with the most combat ready and sustainable force in support of their force projection mission, and the ability to sustain that force with the smallest footprint possible.

Tying Logistics Chain Scorecard to Strategic Drivers

The Marine Corps applied the SCOR methodology to the USMC logistics enterprise mission to create a balanced scorecard. The scorecard is comprised of six SCOR Level 1 metrics that are tied to six Logistics Chain performance attributes (five SCOR performance attributes plus a DoD-unique attribute called readiness). The Level 1 scorecard metrics decompose hierarchically into Level 2 and 3 diagnostic metrics.

Logistics Chain Performance Attributes

Per the Supply Chain Council's definition, a performance attribute is a characteristic of the Logistics Chain that permits it to be analyzed and evaluated against other Logistics Chains with competing strategies. The Marine Corps chose to use all five SCOR attributes and added one DoD unique attribute -- readiness. The following Logistics Chain performance attributes were chosen because they represent characteristics of the Logistics Chain that are important to measure. Additionally, they link Logistics Chain performance to the overarching priorities of the USMC logistics enterprise and ultimately to the mission of the Marine Corps.

Reliability. Logistics Chain delivery reliability is the performance of the Logistics Chain in delivering the correct product to the correct place, at the correct time, in the correct condition and packaging, in the correct quantity, with the correct documentation, and to the correct supported unit. The proposed tier-one metric for this attribute is Quality Order Fulfillment.

Responsiveness. Responsiveness in the Logistics Chain is the velocity at which a Logistics Chain provides products to supported units. This attribute discourages organizations from remaining mired in thinking of themselves in stovepipes, and encourages a more holistic

approach to servicing the supported unit. This attribute enables Logistics Chain managers to balance the different aspects of the Logistics Chain so that they work together, to the benefit of the supported unit. The proposed tier-one metric for responsiveness is Total Logistics Chain Cycle Time.

Flexibility. Logistics Chain flexibility describes the agility of a Logistics Chain in responding to sudden changes in demand. For the Marine Corps, this attribute would be the capacity available to handle sudden demand surges.

Readiness (Equipment). While many commercial concepts apply to the Marine Corps Logistics Chain, readiness is a military-unique type of metric. During our research we discovered that readiness spans all four primary elements of the metrics pyramid (Organization/Personnel, Force Projection, Training, and Equipment). The USMC logistics enterprise owns one face (piece) of the USMC readiness pyramid. The Operational Availability metric has been selected as the readiness attribute's tier-one metric. Figure 2-5 is a metrics pyramid focused on support to the supported unit.

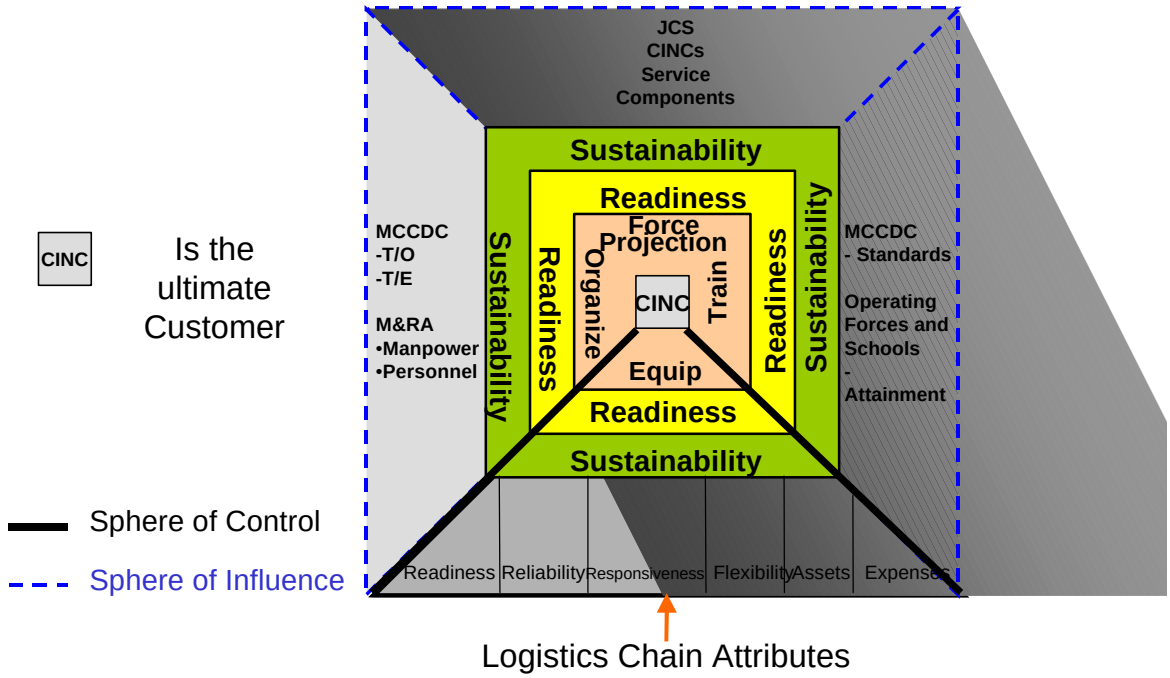
Table 2-1. SCOR Level 1 Metrics

Attribute	Metric
Operational	
Readiness—Unique to the Department of Defense	Operational availability
Reliability	Quality order fulfillment
Responsiveness	Total Logistics Chain cycle time
Flexibility	Upside Logistics Chain capacity
Financial	
Assets	Asset utilization
Expenses	Total Logistics Chain expenses

Assets. This attribute examines the effectiveness of an organization in managing assets to support demand satisfaction. The proposed tier-one metric for this attribute is Asset Utilization.

Total Logistics Chain Expense. Logistics Chain expenses are the expenses associated with operating the Logistics Chain. The proposed tier-one metric for this attribute is Total Logistics Chain Expense.

Figure 2-3. Metrics Pyramid (Looking from top down)



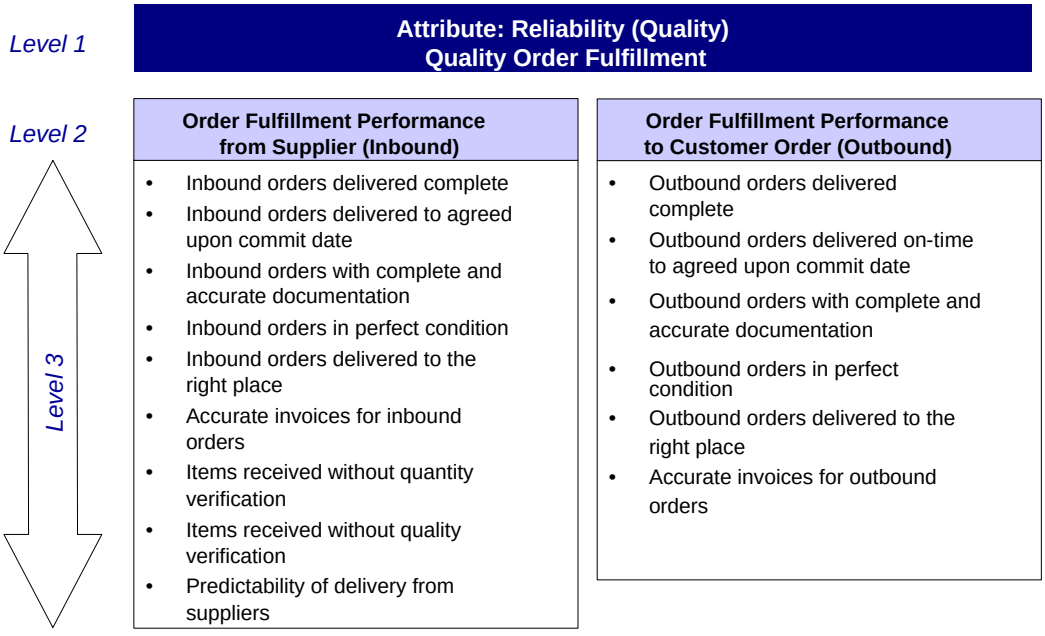


Figure 2-4. Level 2 and Level 3 SCOR Metrics for Reliability

Balanced Scorecard

The Marine Corps teamed with the Supply Chain Council in 2002 to develop a balanced scorecard of metrics tailored to measure logistics operations within the Marine Corps. This included identifying the success factors unique to a military operational environment and translating them into measurable outcomes. Except for readiness, the Marine Corps relied on commercially accepted metrics (from the SCOR model, modified to a DoD equivalent). From the analysis of supply-chain metric best practices the following recommended high-level metrics comprise the USMC balanced scorecard. These strategic metrics enable the Marine Corps to properly balance all the key inputs and outputs of the logistics enterprise.

The attributes in our proposed scorecard can be classified as either operational or financial. The operational attributes are Reliability, Responsiveness, Flexibility, and Readiness. The financial attributes are Assets and Expenses. Together, this group of high-level metrics is more significant than any one metric individually. For example, if the Marine Corps just focused on reducing Logistics Chain cycle time to improve order fulfillment, this could be achieved by doubling inventories (increasing the size of the "Iron Mountain"). However, this is not a desirable result. This one example stresses the importance of having a group of balanced metrics.

Balance, however, does not mean equal importance to the enterprise. The guidance received from USMC logistics leadership during the research phase of the metrics development was clear that three attributes (Responsiveness, Reliability, and Flexibility) are more important than financial metrics.

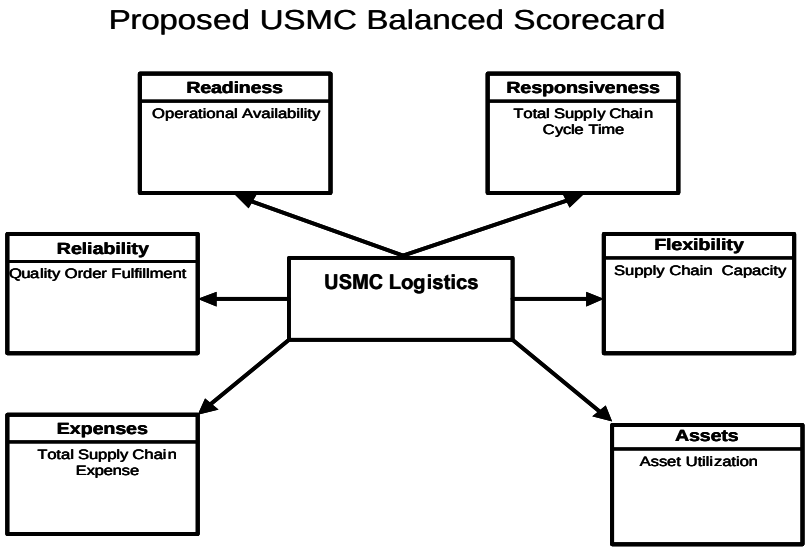


Figure 2-5. USMC Proposed Balanced Scorecard

Measurement versus Diagnostic Metrics

The Marine Corps should measure all components of the enterprise in logistics against the above scorecard tier-one metrics. These high-level strategic metrics are referred to as measurement metrics.

Each measurement metric is composed of lower-level metrics. These lower-level metrics are referred to as diagnostic metrics. These lower-level metrics are intended for use in problem diagnosis and correction. It must be noted that these low-level metrics should not be used for performance measurement because measuring organizations or individuals on lower-level metrics increases the likelihood of metric conflict. Metric conflict exists when two organizations or individuals are working at cross-purposes. For example, many organizations make the mistake of measuring one person on minimizing transportation expenses while measuring another person on minimizing inventory. Unfortunately, any savings achieved related to reducing transportation expenses might be exceeded by increased inventory expenses. Leading organizations measure all individuals on high-level tier-one-type metrics (see Figure 2-7). In this example, both individuals would be measured on minimized total Logistics Chain expenses. Having a common measurement metric will align everyone's individual goals and eliminate metric conflict.

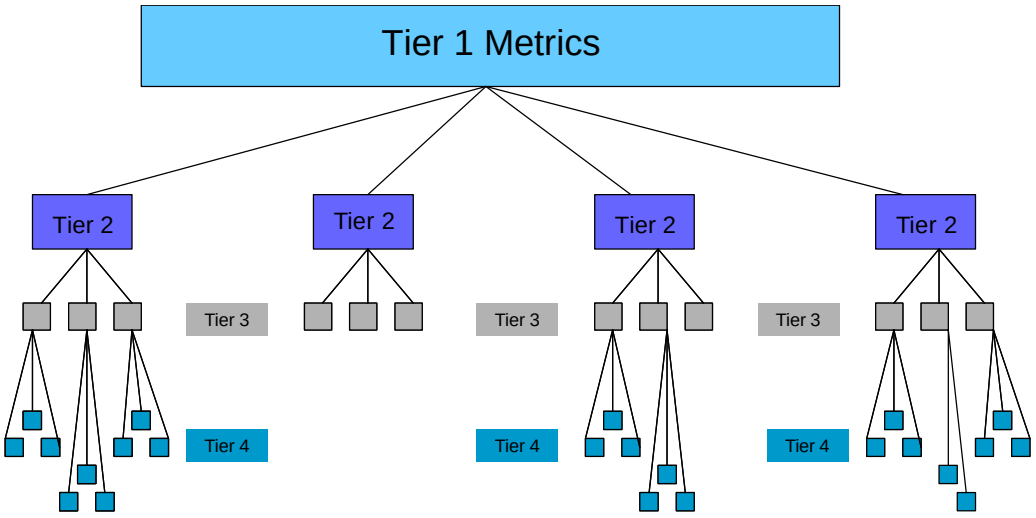


Figure 2-6. Metrics Tiers

How the Marine Corps Balances its Scorecard

To balance its metrics scorecard, the Marine Corps must assign weights of importance to each tier-one metric. The assignment of these weights must be done carefully to ensure that these weighted tier-one metrics are in alignment with the overall mission of the Marine Corps as well as the mission of the logistics enterprise.

Based on guidance received from the USMC logistics leadership, the Corps' scorecard measurement metrics will be weighted as shown in Figure 2-8 below.

Tier-One Metric	Weight
Operational Availability	25 percent
Quality Order Fulfillment	20 percent
Total Logistics Chain Cycle Time	20 percent
Logistics Chain Flexibility	15 percent
Assets	10 percent
Total Logistics Chain Expense	10 percent

Figure 2-7. Recommended Metrics Weighting

How the USMC will Use the Scorecard

Now that the tier-one metrics have been identified, defined, and weights assigned to them, it becomes imperative to understand how to use these recommended metrics.

When a problem is identified with one of the tier-one metrics, the diagnostic metrics that make up that tier-one metric can be examined to determine where the problem is. The Logistics Chain manager would first evaluate the tier-two metrics to see which one was significantly out of line with expected performance. Once the problematic tier-two metric was identified, the manager would then proceed to the tier-three metrics that fall below the problematic tier-two metric. The manager would continue to drill down until the exact location of the problem has been identified.

The initiatives developed through SCOR-focused programs are already achieving many improvements to the Marine Corps Logistics Chain. These are quantifiable in both the operational and financial terms laid out in a balanced scorecard.

Validation Series

Phased implementation of the ILC initiatives began in 2000 using a Validation Series – practical, real world applications of new logistics processes and IT tools. The Validation series is an iterative process, a continuous implementation and refinement of efforts designed to demonstrate the vision of enhanced and more responsive logistical support to the MAGTF. Key metrics, developed in conjunction with the OA, will allow the Marine Corps to measure the benefits and, if necessary, make course corrections to logistics processes, as required. The "To-Be" logistics Operational Architecture (OA) provides a Marine Corps-wide, integrated view of the Logistics Chain focused on fulfillment of the demands for products and services generated by the operating forces. It is based upon standard best practices and performance measures, and then "customized" to suit the expeditionary nature of operations across the Marine Corps logistics enterprise. The fundamental benefit is the ability to provide focused, responsive CSS to the MAGTF.

Units at the 2d FSSG, Camp Lejeune, North Carolina are the first operating forces to begin the logistics transformation. Starting small, they tested the new OA recommended processes, and developed an organization and business rules to support them. The results of the

reengineering and validation efforts are carefully measured against the USMC Balanced Metrics Scorecard.

The 2nd FSSG and the ILC Center are working on solutions that consolidate core competencies, that is, nuclear, biological, and chemical (NBC), food service, and administration (Headquarters and Service (H&S) Battalion); maintenance (2nd Maintenance Battalion); military police (activation of 2nd Military Police (MP) Battalion); engineering (8th Engineer Support Battalion); medium and heavy motor transport (2nd Transportation Support Battalion); and supply (Supply Battalion). As a related matter, the vehicle recovery function has been moved from supported units to the 2nd Maintenance Battalion, and the reparable issue point consolidated at the 2nd Maintenance Battalion.

First impressions of the new process have been positive and are summarized below:

- Battalions can concentrate on core competencies.
- Training is more meaningful.
- Repair response times improved.
- Equipment reliability improved.
- Legacy systems and procedures do not support new processes.

Now that there has been a thorough proof of concept to validate the processes, additional units are being exposed to the new Logistics Chain processes, and new information technology is being implemented as part of the expanded validation.

The new processes are being exported to true "supported units," in this case the 6th Marine Regiment, as part of the Expanded Validation (EV). The EV began in November 2002 and will continue until 2004. The current focus of the EV is the MAGTF's Ground Combat Element (GCE) and CSSE in both deployed and garrison environments.

The EV is currently in the Execution phase whereby OA processes are implemented, enabled by a preliminary version of a COTS software suite. Prior to execution, an extensive base lining was undertaken by HQMC, FSMAO and the Center for Naval Analysis to ensure appropriate performance measurements are defined and documented.

Logistics Information Technology Enablers (GCSS-MC Portfolio):

Pivotal to the success of the overall Logistics transformation process is the development and integration of a suite of logistics automated information systems (LOGAISs) into the joint command, control, communications, computers, intelligence, surveillance, and reconnaissance (C4ISR) architecture. These systems, most of which are legacy systems, are in the process of being integrated or eliminated and will be interoperable in a shared data environment (SDE). The overarching suite of logistics systems currently under development is the GCSS–MC.

GCSS-MC is a portfolio of information technology capabilities designed to support both improved and enhanced MAGTF Combat Service Support functions and MAGTF Commander and Combatant Commanders/Joint Task Force (JTF) CSS information requirements. The GCSS-MC portfolio is directly linked to the functional requirements and discrete performance measures developed within the Marine Corps logistics OA. GCSS-MC has been designated as the lead program for enabling modernization within the Marine Corps Logistics Chain and it is acknowledged as the principal enabler to accomplishing change in the Marine Corps Logistics Chain. GCSS-MC will provide the capability to "drill down" beyond Tier 1 metrics to Tiers 2 and 3. Measuring Tiers 2 and 3 will help the Corps' logisticians in managing and fine-tuning its Logistics Chain to provide better MAGTF support.

GCSS-MC will be implemented as an integral part of Marine Corps and Department of Defense logistics operations. Development of GCSS-MC is an evolutionary bottom-up approach relying on modernization and replacement of legacy information systems as well as the introduction of new applications and technology into a seamless, interoperable computing architecture. As such, programs that are a part of the GCSS-MC portfolio, consisting of over 40 logistics applications, will continue to be managed separately while conforming to the GCSS requirements document, and the Marine Corps logistics operational architecture.

Near Term goals in FY 03 are sustainment of the IT support for the ILC Expanded Validation (EV) within II Marine Expeditionary Force; rapid, streamlined procurement of the objective GCSS-MC Commercial-of-the-Shelf (COTS) software suite; creation of the GCSS-MC Systems Architecture; formulation of PM GCSS-MC as a portfolio management organization; execution of Systems Realignment and Categorization (SRAC) retirement and migration plans; and, expansion of GCSS-MC functionality based on priorities and available funding. These activities are necessary to continue expedited development and deployment of critical CSS IT to the Operating Forces during FY-04.

In support of the Clinger-Cohen Act, portfolio management of the Marine Corps logistics information systems will allow effective investment of resources while providing rapid implementation of technology and initiatives and eliminating duplicative, "stovepiped" efforts.

> *"This is not going to be easy. Some people will have to give up old friends."*
> -- LtGen Gary McKissock, USMC, Deputy Commandant
> for Installations & Logistics

Systems Realignment And Categorization (SRAC)

The purpose of the SRAC initiative as part of the Information Technology modernization process is to reduce the number of redundant Marine Corps logistics applications and generate recommendations for rational technology investment. The problem of costly and redundant legacy automated information systems within DoD is pervasive.

Since the inception of SRAC, the number of legacy USMC LOGAIS systems has been reduced from approximately 240 to 70, of which about 30 are Marine Corps unique. That number will continue to be reduced until, at the time of the GCSS-MC IOC, logistics systems will be interfaced, integrated, and interoperable to satisfy Joint Service and Marine Corps-unique requirements with no unnecessary redundancy. The end result will be a Logistics Chain that operates in near-to-real time and from the supported unit directly back to the supporting unit and source of supply. Commercial organizations with complex Logistics Chains typically use 10-15 applications, mostly of the COTS variety, built with business rules from commercial best practices.

SRAC examines the automated information systems (AISs) of transportation, supply, maintenance, health services, general engineering, and acquisition as well as the general services applications such as contracts, finance, and personnel as they relate to performing logistics functions. SRAC categorization includes analysis using technical, functional, and cost criteria, as well as the ability to continuously develop and support the software. The execution of SRAC is divided into three progressively more rigorous phases:

- *Phase 1* concentrated on discovering "no-value" AISs and retiring them. No-value AISs are those that have either no users or no funded support, or are unsupportable because of the use of obsolete technology.
- *Phase 2* identified "low-value" AISs. Primarily, these are systems that support a low number of logistics functions and a low number of users. Low-value AISs are retired, and required functional capability will be migrated to other systems.
- *Phase 3* deals with "high-value" AISs that support many logistics functions and a large numbers of users. Migration and integration plans are developed to consolidate these AISs to a manageable number. At the same time, COTS applications are considered. Phase 3 includes a rigorous analysis of the technology and architecture of each AIS, along with its documentation and support.

The SRAC core team realized that the experts needed for the SRAC domain teams are scarce resources. To maximize SRAC productivity and minimize travel requirements, a virtual team-working environment was constructed. SRAC is a pioneer in the use of virtual web-based collaborative team rooms.

(4) SIGNIFICANT CHALLENGES, RESOLUTIONS, SOLUTIONS, AND BEST PRACTICES

The evolution of logistics shows that its relative importance as a function of warfare has been steadily increasing in complexity. The logistics process provides a framework around which to build a logistics system. The complexity and interrelationships of logistics call for a system that must be capable of fully supporting Expeditionary Maneuver Warfare while making use of a variety of basing options, a combination of push and pull distribution procedures, and flexible command and control. The Marine Corps must provide forces that are largely self-sufficient.

The process for resolution of the significant challenges facing us is to continue partnering with industry; mature our internal partnering program; educate our logisticians and the supported unit; develop, test, and field GCSS-MC to give us a joint C4ISR interoperability capability; utilize phased implementation prior to full-scale development; upgrade our LOGAIS systems by eliminating stovepipes; and change the culture.

Marine Corps Stock Positioning Initiative

Another major initiative undertaken by the Marine Corps is a partnership with DLA. They are forward stock positioning in Sigonella, Yokosuka, Germany, and Pearl Harbor. This has caused a recent drop of almost 20 days in wholesale customer wait time (CWT) across the Marine Corps. Efforts are also underway to set up forward stock positioning in Okinawa and Bahrain. This will extend the reach and efficiency of the forward stock positioning program and provide benefits for contingencies in an even greater operational area.

This initiative is expected to produce further improvement in Logistics Chain performance through the use of SCOR-related best business practices, including the following:

- Asset tracking and pipeline visibility derived from the point of sale (POS)
- Allowing DLA to anticipate demand and provide better service at reduced cost (The reductions in cost should be achieved through transportation savings and reducing the number of last-minute procurements.)
- Rapid supplier (e.g., DLA) response to fluctuations in the Logistics Chain through improved forecasting
- Flexibility for the asset manager to buy from existing commercial Logistics Chains and deliver directly to retail activities
- A reduction in service retail inventory investments held at retail activities
- The enabling of the Marine Corps to build virtual Logistics Chains and tie them to existing DoD Logistics Chains, such as DLA.

Centralized SECREP Management

The centralization of SECREP Management is the first of the ILC business process reengineering projects designed to improve Logistics Chain support to the Operating forces. The centralized SECREP management project initially focused on reducing Customer Wait Time (CWT) by centralizing inventory management, and gaining in-transit visibility of SECREP assets.

Centralized inventory re-computation has allowed the Marine Corps to correct/level its SECREP inventory requirements. This ILC initiative has transitioned accountability for SECREP's to a centralized account and reduced the management burden of maintaining inventory within the Operating forces. Asset visibility for SECREPs remains a key requirement for this effort and is the central capability necessary for maximum Return On

Investment (ROI). The Commander, Marine Corps Materiel Command (COMMARCORMATCOM) is the executive agent for this initiative and the IOC/FOC was achieved in October 2000 and October 2001, respectively.

The SECREP Consolidation initiative has demonstrated both operational and financial improvements within Marine Corps logistics. To date, the SECREP program has measured:

- Right-sized Retail Inventory from $600M+ to $273M
- SecRep Mgt Team Providing on-site Assistance. By 30 Apr capability to fulfill all requirements.
- Transferred $17M in deficiencies - 478 PEI's off Deadline

2nd and 3rd Echelons of Maintenance Consolidation

The proof of concept for this initiative began in July 2001 for 2nd FSSG. All data are very preliminary at this point. However, they indicate the following:

- Repair cycle time is decreasing and becoming less variable than in the past.
  - Median repair cycle time decreased by 20 days (70 percent) between November 2001 and November 2002.
  - 95 percent of repair tasks were completed in 100 days or fewer in November 2002, compared to 133 days in November 2000.
- CWT is shorter and less variable than in the past:
  - Median CWT decreased by 9 days (60 percent) between November 2001 and November 2002.

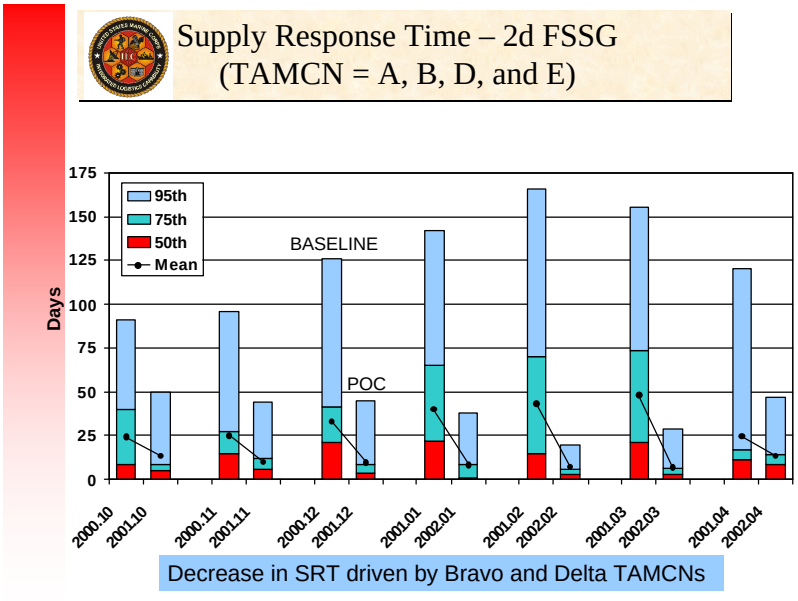


Figure 2-7.

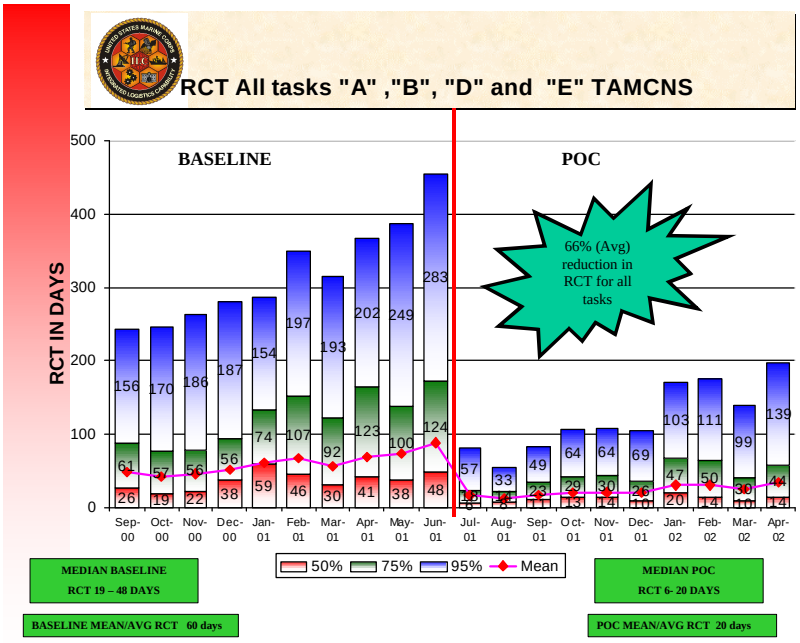

RCT All tasks "A" ,"B", "D" and "E" TAMCNS
RCT IN DAYS
BASELINE
POC
66% (Avg) reduction in RCT for all tasks
MEDIAN BASELINE RCT 19 – 48 DAYS
BASELINE MEAN/AVG RCT 60 days
50% 75% 95% Mean
MEDIAN POC RCT 6- 20 DAYS
POC MEAN/AVG RCT 20 days

Figure 2-8.

Section 3
Knowledge Transfer

(1) SHARED LESSONS

Communication and education have been a priority of USMC logistics from the start. Educating personnel on the fundamentals of ILC, particularly Logistics Chain management and the SCOR model, is essential not only for passing along lessons learned, but also for helping transform the Marine Corps culture itself.

Marine Corps logistics employs numerous methods to report the progress of initiatives, seek input and participation, and share lessons learned. The success of internal communications depends on both formal and informal communications.

The following methods are used most effectively to communicate progress on ILC initiatives, participation, and lessons learned within the Marine Corps:

- *Web site*—The Marine Corps logistics web site, http://www.hqmc.usmc.mil/lpi.nsf, communicates general information related to, among other issues, the initiatives being evaluated and developed to improve logistics performance to the supported units. Everyone in the Marine Corps has access to this Internet site. During 2002, the Web-based Logistics IR Plan was approved. It provides an interactive and current source of information related to IR strategies, plans, guidance, and implementation.
- *Situation reports (SITREPs)*—Both weekly and monthly SITREPs are used to communicate the status of progress of logistics initiatives to leadership and staff in the logistics community. A roundtable forum is used for the monthly reports, which are broader in scope and less detailed than the weekly reports because of the timeframe involved. These reports are reviewed by the CSSE Advocacy Board for compliance with approved recommendations by the board and to ensure they are in consonance and on schedule with the latest edition of the Marine Corps Logistics Campaign Plan.
- *General Officer Symposium*—This forum provides the opportunity for logistics senior leadership to describe current performance and future enhancements to other senior leaders in the Marine Corps, and to identify advocates for each of the potential and current improvement initiatives.
- *Marine Corps Logistics Education Program (MCLEP)*—This 12-day course in commercial logistics practices held at Pennsylvania State University is convened twice a year. The course targets mid-level career officers and enlisted personnel to teach them the fundamentals of how industry is conducting logistics. This course is intended to promote development of the logistics profession within the Marine Corps. In addition, this training provides a forum for networking so that each trainee can learn from his counterparts. The Marine Corps has also started a "Mini-MCLEP,"

which is a condensed 5-day version of the MCLEP that is provided to the operating forces by a mobile training team.

- The Marine Corps is also partnered with Naval Supply Systems Command (NAVSUP), Mechanicsburg, Pennsylvania on a resident Marine Corps Logistics Training Program focused on Logistics Chain initiatives and precision or focused logistics initiatives, tools, and techniques.
- In 2002, the Marine Corps opened up its Advanced Logistics Officers Course/ Transportation Logistics Officers Course to restricted officers, staff non-commissioned officers (NCOs), and civilians.
- Also in 2002, the Marine Corps partnered with the University of North Carolina, Chapel Hill, North Carolina on a seminar-based Logistics Chain Management and Best Business Practices Course. This course includes topics such as best commercial practices and change management and provides Marine logisticians with exposure to industry leaders and academia.
- The Marine Corps also now offers a LOGTECH MBA online. It culminates with two weeks of resident training at the University of North Carolina, Chapel Hill.
- Finally, the Marine Corps is in the initial stages of design and development of a School of Logistics. When convened, the school will have a rotating chair and be staffed with PhDs, senior Marine officers, and staff NCOs. The school will concentrate on developing a progressive logistics education continuum and be primarily focused on operational logistics, and kept current with best industry and government practices.
- *Informal communications among the supply community*—A supply element is in place at each node along the Logistics Chain, and informal communication among the people at these nodes is a source of innovative and effective ideas to improve delivering supplies to supported units. Ideas from this informal communications forum can be conveyed to others via the Marine Corps Logistics Web Site.
- *Periodicals*—Various periodicals such as *Centerhead Notes* and *Journal Records* are used to communicate a variety of topics including logistics issues to all components of the Marine Corps. These periodicals reach the operating forces as well as support organizations.
- *Informal communications with fleet managers*—Like other forms of informal communication, this forum allows fleet managers to discuss transportation problems and alternative solutions.
- *Global Combat Support System Management Team*—This team brings together the numerous operating and support elements of the encompassing GCSS initiative and facilitates both formal (charter-specific) and informal communications to identify common problems and solutions.
- *Portfolio Management Board* (includes members of operational forces)—This board manages the portfolios across all systems and provides a forum to identify both obvious and hidden linkages among operating and support elements.

- *SRAC Core Team*—Although the core team is primarily chartered to "recommend" domain-level AIS migration and cross-domain integration strategies, the six supporting logistics functional domains are working individually and collectively to assure that Marine Corps legacy logistics processes and systems are moving towards the objectives of the new Logistics OA. SRAC is paving the way for a new integrated "system of systems" capability for logistics support, the GCSS-MC.

(2) INITIATIVE TRANSFER AND CANDIDATES

Logistics transformation has the potential for application across all of DoD. The GCSS-MC's shared data environment will interface and be interoperable across all elements of the DoD logistics infrastructure and help create a seamless support system environment. The end result will be to create a precision logistics capability and release the operating forces to concentrate on what they do best, warfighting. Lessons learned from this ongoing initiative and process are being shared with other Services and industry to best leverage joint strengths and capabilities and reduce the risk of redundant system/process development.

Hosting and participating in inter-Service conferences continues to create opportunities for counterparts to identify common problems and solutions, discuss initiatives of mutual interest, and develop synergy that will provide benefit across all of DoD.

A variety of government and professional association conferences provide similar forums, many times including commercial input in the mix of solutions. The National Defense Industrial Association (NDIA), for example, has a vested interest in the design and development of weapons systems, information systems, and processes that support the delivery of supplies and materiel to the operating forces. NDIA regularly attends Marine Corps-sponsored wargames/exercises/experimentations and conferences. They provide valuable information and data on R&D efforts, new industry initiatives, and processes that have cross-Service applications.

Over the past five years, the Marine Corps has developed a true partnership with the Army, Navy, Air Force, academia, other government agencies, DoD laboratories, and non-profit institutions. This relationship identified industry best practices and other opportunities for improvement and benchmarking.

As we continue to evolve our logistics capability, opportunities for sharing lessons learned will abound. The scope and sweeping nature of the changes being tested and implemented provide a wealth of material to share with both military and commercial organizations alike. Also, mutual sharing of experiences and lessons learned will be the way for military logistics to keep in step with the ever-increasing pace of universal logistics change.

The Marine Corps is routinely invited to discuss our Logistics Chain initiatives at a variety of forums. Organizations that continue to express an interest in learning more about and partnering in selected initiatives include other DoD and non-DoD government organizations, fleet operators, and managers of large inventories.

The Marine Corps has gone forward with our Logistics Chain implementation, including the GCSS-MC portfolio management program, the centerpiece of our logistics transformation within DoD. The scope of our Logistics Chain evolution underscores our sustained commitment to making the changes necessary to ensure that the Marine Corps provides the best logistics support possible to our expeditionary operating forces.

For the future, the Marine Corps will continue to pursue Logistics Chain excellence. The mission of logisticians is to provide the tools and processes necessary to enable the Marine Corps' forces to respond to crises around the globe.

> *"A real knowledge of supply and movement factors must be the basis of every leader's plan; only then can he know how and when to take risk with those factors, and battles are won by taking risks."*
> -- Napoleon

Appendix A
Abbreviations

ACMC	Assistant Commandant of the Marine Corps
AF/IL-I	U.S. Air Force Office of Supply Chain Integration
AGS	Aviation Ground Support
AIS	Automated Information Systems
C4ISR	Command, Control, Communications, Computers, Intelligence, Surveillance, and Reconnaissance
CLS	Contractor Logistics Support
CNA	Center for Naval Analyses
COE	Common Operating Environment
COTS	Commercial Off-the-Shelf
CSS	Combat Service Support
CSSE	Combat Service Support Element
CWT	Customer Wait Time
D1	Deliver a Stocked Product
D2	Deliver a Make-to-Order Product
DC I&L	Deputy Commandant for Installations and Logistics
DII	Defense Information Infrastructure
DLA	Defense Logistics Agency
DoD	Department of Defense
DON	Department of the Navy
DPG	Defense Planning Guidance
EFDS	Expeditionary Force Development System
EOM	Echelon of Maintenance
EV	Expanded Validation
FOC	Full Operational Capability
FSMAO	Field Supply Maintenance Analysis Office
FSSG	Force Service Support Group
FY	Fiscal Year
GCE	Ground Combat Element
GCSS-MC	Global Combat Support System, Marine Corps

H&S	Headquarters and Service
ILC	Integrated Logistics Capability
IOC	Initial Operational Capability
IR	Information Resources
IT	Information Technology
LCM	Life-Cycle Management
LOGAIS	Logistics Automated Information System
MAGTF	Marine Air-Ground Task Force
MATCOM	Marine Corps Materiel Command
MCCDC	Marine Corps Combat Development Command
MCLCP	Marine Corps Logistics Campaign Plan
MCLEP	Marine Corps Logistics Education Program
MCOTEA	Marine Corps Operational Test and Evaluation Activity
MCSC	Marine Corps Systems Command
MEB	Marine Expeditionary Brigade
MEF	Marine Expeditionary Force
MEU	Marine Expeditionary Unit
MLCM	Materiel Life-Cycle Management
MP	Military Police
MPF(F)	Maritime Prepositioning Force (Future)
MTBF	Mean Time Between Failures
NAVSUP	Naval Supply Systems Command
NBC	Nuclear, Biological, and Chemical
NCO	Non-commissioned Officer
NDIA	National Defense Industrial Association
NIMS	National Inventory Management Strategy
OA	Operational Architecture
OMFTS	Operational Maneuver From the Sea
ONR	Office of Naval Research
P1	Plan Logistics Chain
POC	Proof of Concept
POS	Point of Sale

R&D	Research and Development
RAM	Reliability, Availability, and Maintainability
RIP	Reparable Issue Point
RM	Request Management
S1	Source a Stocked Product
S2	Source a Make-to-Order Product
SBL	Sea-Based Logistics
SCOR	Supply Chain Operational Reference
SDE	Shared Data Environment
SECREP	Secondary Reparable
SITREP	Situation Report
SOLE	Society of Logistics Engineers
SRAC	Systems Realignment and Categorization
TACOM	U.S. Army Tank-Automotive and Armaments Command
TCO	Total Cost of Ownership
UPS	Uninterrupted Power Supply
USMC	United States Marine Corps